

# Ecological site R144AY050RI Subaqueous Haline Flats

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## General information

**Provisional.** A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

## Ecological site concept

The Massapog series consists of very deep, subaqueous soils permanently submerged beneath 10 through 150 cm of tidal estuarine water on flood tidal delta flats, washover fan flats in coastal lagoons and bays. Slope ranges from 0 through 2 percent. Representative soils are Massapog, Nagunt, and Rhodesfolly 0-1 meter depth.

Massapog soils are formed in sandy marine and estuarine sediments transported by flood tidal currents. Nagunt soils are formed in sandy marine deposits as a result of washover events, eolian deposition, and tidal flooding. Buried surface horizons and stratification are often identified. The Rhodesfolly soils are formed in sandy marine deposits.

The site is used for recreation and support benthic aquatic habitat. Fishing is commonplace and the species found in the area are smelt, small cod, flounder, scup, menhaden, and white perch. Shellfish farming and recreational harvesting are common. Some areas are vegetated with native algae and eelgrass (*Zostera marina*). Vegetative cover ranges from 0 to 35 percent.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	(1) <i>Zostera marina</i> (2) <i>Ruppia maritima</i>

## Physiographic features

## Climatic features

## Influencing water features

## Soil features

## Ecological dynamics

Some areas are vegetated with native algae and eelgrass (*Zostera marina*). Vegetative cover ranges from 0 to 35 percent.

## State and transition model

## 144AY050 –Subaqueous Haline Flat

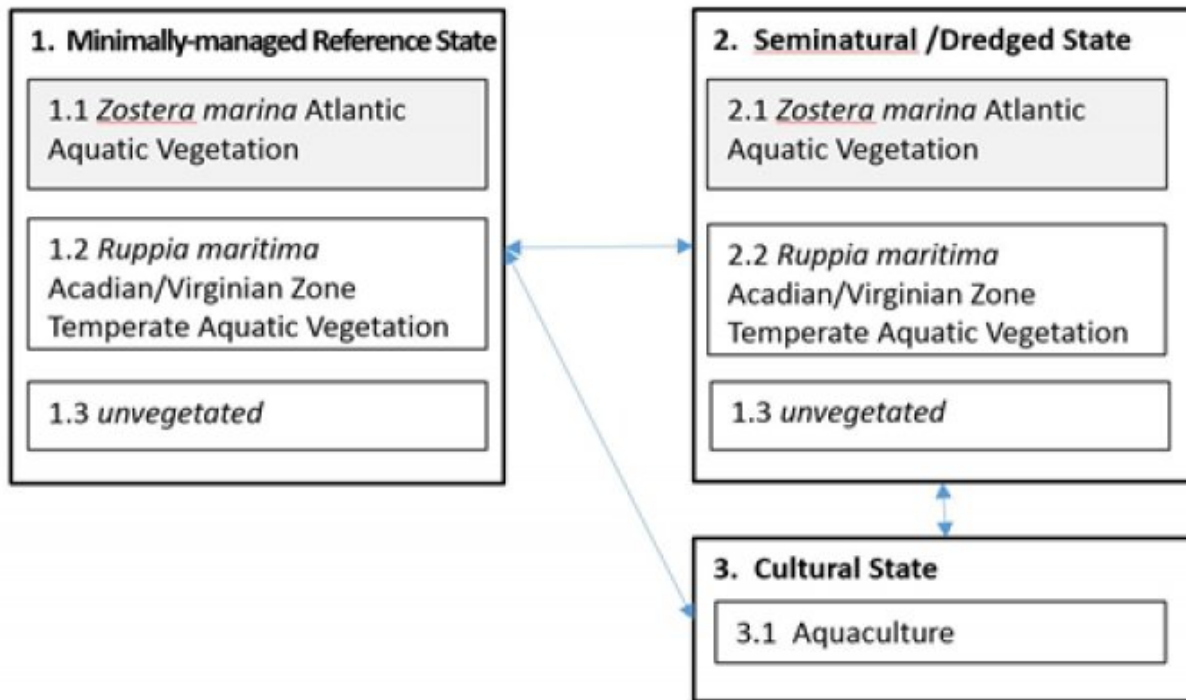


Figure 1. STM\_144AY050\_Subaqueous Haline Flat

Transition	Drivers/practices
T1-2, T3-1	Dredging
T1-3, T2-3	Aquacultural practices
R2-1, R3-1	Fill and seagrass planting

Figure 2. STM\_144AY050\_Subaqueous\_Haline\_Flat

### Other references

#### REFERENCES

Bradley, M.P. and Stolt, M.H., 2003. Subaqueous soil-landscape relationships in a Rhode Island estuary. Soil Science Society of America Journal, 67(5)\_1487-1495.

Ditzler, C.A., Ahrens, R.J., Rabenhorst, M.C., Stolt, M., Hipple, K., and Turenne, J. s.d. Classification, Mapping, and Interpretation of Subaqueous Soils. Unpubl. Manuscript.

Stolt, M., Bradley, M., Turenne, J., Payne, M., Scherer, E., Cicchetti, G., Shumchenia, E., Guarinello, M., King, J., Boothroyd, J. and Oakley, B., 2011. Mapping shallow coastal ecosystems: a case study of a Rhode Island lagoon. Journal of Coastal Research, 27(6A)\_1-15.

### Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators

are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

## Indicators

1. **Number and extent of rills:**

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2. **Presence of water flow patterns:**

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3. **Number and height of erosional pedestals or terracettes:**

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

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5. **Number of gullies and erosion associated with gullies:**

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6. **Extent of wind scoured, blowouts and/or depositional areas:**

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7. **Amount of litter movement (describe size and distance expected to travel):**

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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

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12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

Dominant:

Sub-dominant:

Other:

Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**

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14. **Average percent litter cover (%) and depth ( in):**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

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16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**

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17. **Perennial plant reproductive capability:**

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